

Books, watches, notes or cell phones are **not** allowed. The **only** calculators allowed are the Sharp EL-531***. You **must** show all your work, the correct answer is worth 1 mark the remaining marks are given for the work.

Question 1. (5 marks) Find the radius of convergence and interval of convergence of the following series:

$$\sum_{n=1}^{\infty} \frac{(2x-1)^n}{5^n \sqrt{n}}$$

Question 2. (5 marks) Find the Taylor series for $f(x) = \sqrt{x}$ centered at $a = 16$.